

Preliminary Amendment

National Stage Entry of PCT/JP2004/011910

Attorney Docket No.: Q87781

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (original): A laminated glass,
wherein at least an interlayer film for laminated glasses and a glass sheet are laminated and unified, Head Injury Criteria (HIC) values, measured according to regulations of European Enhanced Vehicle-safety Committee; EEVC/WG 17, being 1,000 or lower.
2. (original): A laminated glass,
wherein at least an interlayer film for laminated glasses and a glass sheet are laminated and unified, Head Injury Criteria (HIC) values, measured by dropping an impactor head from a height of 4 m above the surface of the laminated glass according to regulations of Economic Commission for Europe; ECE-Regulation No. 43 Annex 3, being 300 or lower.
3. (currently amended): The laminated glass according to Claim 1 ~~or 2~~,
wherein the interlayer film for laminated glasses contains a plasticizer for interlayer films in an amount 30 parts by weight or more per 100 parts by weight of polyvinyl acetal resin.
4. (currently amended): The laminated glass according to Claim 1, ~~2 or 3~~,
wherein the interlayer film for laminated glasses has a storage elasticity modulus G' in a linear dynamic viscoelasticity test, measured with frequencies being varied at 20°C in a range of frequencies of 5.0×10^1 to 1.0×10^2 Hz, of 3×10^7 Pa or lower.
5. (currently amended): The laminated glass according to Claim 1, ~~2, 3 or 4~~,
wherein the interlayer film for laminated glasses has $\tan \delta$ of at least one point of 0.6 or more at 20°C in a range of frequencies of 5.0×10^1 to 1.0×10^2 Hz.

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6. (currently amended): The laminated glass according to Claim 1, ~~2, 3, 4 or 5~~,
wherein the interlayer film for laminated glasses has maximum stress σ of 20 MPa or lower and fracture point deformation ϵ of 200% or more, derived from a stress-deformation curve at 20°C and a tensile speed of 500%/min.

7. (original): The laminated glass according to Claim 6,
wherein the interlayer film for laminated glasses has breaking energy of 1.0 J/mm² or larger.

8. (currently amended): The laminated glass according to Claim 4, ~~5, 6 or 7~~,
wherein the interlayer film for laminated glasses comprises a crosslinked polyvinyl acetal resin having an acetalization degree of 60 to 85 mol% and contains a plasticizer for interlayer films in an amount 40 parts by weight or more per 100 parts by weight of the above-mentioned polyvinyl acetal resin.

9. (original): The laminated glass according to Claim 8,
wherein the interlayer film for laminated glasses has a thickness of 800 μm or more.

10. (currently amended): The laminated glass according to Claim 4, ~~5, 6, 7, 8 or 9~~,
wherein the interlayer film for laminated glasses comprises a polyvinyl acetal resin having a half band width of a peak of a hydroxyl group of 250 cm⁻¹ or lower in measuring infrared absorption spectra.

11. (currently amended): The laminated glass according to Claim 4, ~~5, 6, 7, 8, 9 or 10~~,
wherein rubber particles are dispersed in the interlayer film for laminated glasses.

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12. (currently amended): The laminated glass according to Claim 1, ~~2, 3, 4, 5, 6, 7, 8, 9,~~
~~10 or 11,~~

wherein the interlayer film for laminated glasses has a multilayer structure.

13. (original): The laminated glass according to Claim 12,

wherein the interlayer film for laminated glasses has a two-layers structure and a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in one layer is at or below a half of a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in the other layer.

14. (original): The laminated glass according to Claim 13,

wherein the storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in one layer is 2×10^6 Pa or lower and the storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in the other layer is 1×10^7 Pa or higher.

15. (original): The laminated glass according to Claim 14,

wherein the layer having a storage elasticity modulus G' of 2×10^6 Pa or lower at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz has $\tan \delta$ of 0.7 or more at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz.

16. (original): The laminated glass according to Claim 12,

wherein the interlayer film for laminated glasses has a three-layers structure and a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in an intermediate layer is at or below a half of a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in one or any of two layers composing the outermost layer.

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17. (original): The laminated glass according to Claim 16,
wherein a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in the intermediate layer is 2×10^6 Pa or lower and a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in one or any of two layers composing the outermost layer is 1×10^7 Pa or higher.

18. (original): The laminated glass according to Claim 17,
wherein the intermediate layer has $\tan \delta$ of 0.7 or more at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz.

19. (currently amended): The laminated glass according to Claim 16, ~~17 or 18~~,
wherein a thickness of the intermediate layer is 10% or higher of a total thickness of the interlayer film for laminated glasses.

20. (original): The laminated glass according to Claim 12,
wherein the interlayer film for laminated glasses has a three-layers structure and a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in one or any of two layers composing the outermost layer is at or below a half of a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in an intermediate layer.

21. (original): The laminated glass according to Claim 20,
wherein a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in one or any of two layers composing the outermost layer is 2×10^6 Pa or lower and a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in the intermediate layer is 1×10^7 Pa or higher.

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22. (original): The laminated glass according to Claim 21,
wherein $\tan \delta$ at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in one or any of two layers composing the outermost layer is 0.7 or more.

23. (currently amended): The laminated glass according to Claim 20, ~~21 or 22~~,
wherein a total thickness of the outermost layer is 10% or higher of a total thickness of the interlayer film for laminated glasses.

24. (original): The laminated glass according to Claim 12,
wherein the interlayer film for laminated glasses has a multilayer structure of four-layers or more and a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in at least one layer of an intermediate layer is at or below a half of a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in one or any of two layers composing the outermost layer.

25. (original): The laminated glass according to Claim 24,
wherein a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in at least one layer of the intermediate layer is 2×10^6 Pa or lower and a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in one or any of two layers composing the outermost layer is 1×10^7 Pa or higher.

26. (original): The laminated glass according to Claim 25,
wherein the intermediate layer having a storage elasticity modulus G' of 5.0×10^1 to 1.0×10^2 Hz being 2×10^6 Pa or lower at 20°C and a frequency has $\tan \delta$ of 0.7 or more at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz.

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27. (currently amended): The laminated glass according to Claim 25 ~~or 26~~,
wherein a total thickness of the intermediate layer having a storage elasticity modulus G' of 2×10^6 Pa or lower at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz is 10% or higher of a total thickness of the interlayer film for laminated glasses.

28. (currently amended): The laminated glass according to Claim 17, ~~18, 19, 25, 26 or 27~~,

wherein the intermediate layer having a storage elasticity modulus G' of 2×10^6 Pa or lower at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz is biased to the side of either surface layer with respect to the thickness direction of the interlayer film for laminated glasses.

29. (original): The laminated glass according to Claim 12,
wherein the interlayer film for laminated glasses has a multilayer structure of four-layers or more and a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in one or any of two layers composing the outermost layer is at or below a half of a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in at least one layer of an intermediate layer.

30. (original): The laminated glass according to Claim 29,
wherein a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in one or any of two layers composing the outermost layer is 2×10^6 Pa or lower and a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in at least one layer of the intermediate layer is 1×10^7 Pa or higher.

31. (original): The laminated glass according to Claim 30,
wherein $\tan \delta$ at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in one or any of two layers composing the outermost layer is 0.7 or more.

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32. (currently amended): The laminated glass according to Claim 29, ~~30 or 31~~, wherein a total thickness of the outermost layer is 10% or higher of a total thickness of the interlayer film for laminated glasses.

33. (currently amended): The laminated glass according to Claim 21, ~~22, 23, 30, 31 or 32~~, wherein the intermediate layer having the storage elasticity modulus G' of 1×10^7 Pa or higher at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz is biased to the side of either surface layer with respect to the thickness direction of the interlayer film for laminated glasses.

34. (currently amended): The laminated glass according to Claim 12, ~~16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32 or 33~~, wherein the interlayer film for laminated glasses has a multilayer structure of three-layers or more and each layer has wedged form and the layer having wedged form is alternately overlaid with the layer of wedged form having a small storage elasticity modulus G' taken as an intermediate layer so that an overall thickness becomes uniform.

35. (currently amended): The laminated glass according to Claim 1 ~~or 2~~, wherein the interlayer film for laminated glasses generates a break of 10 mm or longer in length in measuring a Head Injury Criteria (HIC) value.

36. (currently amended): The laminated glass according to Claim 1, ~~2 or 3~~, wherein the interlayer film for laminated glasses has a sandwiched structure between glass sheets and a thickness of at least one glass sheet is 1.8 mm or smaller.

37. (currently amended): The laminated glass according to Claim 1, ~~2 or 3~~, wherein the interlayer film for laminated glasses is sandwiched between a glass sheet and a transparent resin plate.

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38. (original): The laminated glass according to Claim 37,
wherein the transparent resin plate comprises polycarbonate, acrylic resin, acrylic copolymerizable resin or polyester resin.

39. (currently amended): The laminated glass according to Claim 37 ~~or 38~~,
wherein the transparent resin plate is coated with transparent elastomer.

40. (currently amended): The laminated glass according to Claim 1, ~~2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38 or 39~~,

wherein electromagnetic wave shielding performance in frequencies of 0.1 to 26.5 GHz is 10 dB or less, haze is 1% or lower, visible transmittance is 70% or higher, and solar radiation transmittance in a wavelength region of 300 to 2,100 nm is 85% or lower of visible transmittance.

41. (original): An interlayer film for laminated glasses,
which contains a plasticizer for interlayer films in an amount 30 parts by weight or more per 100 parts by weight of polyvinyl acetal resin,
a storage elasticity modulus G' in a linear dynamic viscoelasticity test, measured with frequencies being varied at 20°C in a range of frequencies of 5.0×10^1 to 1.0×10^2 Hz, is 3×10^7 Pa or lower.

42. (original): The interlayer film for laminated glasses according to Claim 41,
wherein $\tan \delta$ of at least one point is 0.6 or more at 20°C in a range of frequencies of 5.0×10^1 to 1.0×10^2 Hz.

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43. (currently amended): The interlayer film for laminated glasses according to Claim 41 ~~or 42~~,

wherein maximum stress σ is 20 MPa or smaller and fracture point deformation ϵ is 200% or more, derived from a stress-deformation curve at 20°C and a tensile speed of 500%/min.

44. (original): The interlayer film for laminated glasses according to Claim 43, wherein breaking energy is 1.0 J/mm² or larger.

45. (currently amended): The interlayer film for laminated glasses according to Claim 41, 42, ~~43 or 44~~,

which comprises a crosslinked polyvinyl acetal resin having an acetalization degree of 60 to 85 mol% and contains a plasticizer for interlayer films in an amount 40 parts by weight or more per 100 parts by weight of the above-mentioned polyvinyl acetal resin.

46. (original): The interlayer film for laminated glasses according to Claim 45, which has a thickness of 800 μm or more.

47. (currently amended): The interlayer film for laminated glasses according to Claim 41, 42, 43, 44, ~~45 or 46~~,

which comprises a polyvinyl acetal resin, a half band width of a peak of a hydroxyl group in measuring infrared absorption spectra being 250 cm⁻¹ or less.

48. (currently amended): The interlayer film for laminated glasses according to Claim 41, 42, 43, 44, ~~45, 46 or 47~~,

wherein rubber particles are dispersed.

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49. (currently amended): The interlayer film for laminated glasses according to Claim 41, ~~42, 43, 44, 45, 46, 47, or 48,~~
which has a multilayer structure.

50. (original): The interlayer film for laminated glasses according to Claim 49,
which has a two-layers structure, a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in one layer being at or below a half of a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in the other layer.

51. (original): The interlayer film for laminated glasses according to Claim 50,
wherein a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in one layer is 2×10^6 Pa or lower and a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in the other layer is 1×10^7 Pa or higher.

52. (original): The interlayer film for laminated glasses according to Claim 51,
wherein the layer having a storage elasticity modulus G' of 5.0×10^1 to 1.0×10^2 Hz of 2×10^6 Pa or lower at 20°C and a frequency has $\tan \delta$ of 0.7 or more at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz.

53. (original): The interlayer film for laminated glasses according to Claim 49,
which has a three-layers structure, a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in an intermediate layer being at or below a half of a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in one or any of two layers composing the outermost layer.

54. (original): The interlayer film for laminated glasses according to Claim 53,
wherein a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in the intermediate layer is 2×10^6 Pa or lower and a storage elasticity modulus G' at

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20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in one or any of two layers composing the outermost layer is 1×10^7 Pa or higher.

55. (original): The interlayer film for laminated glasses according to Claim 54, wherein the intermediate layer has $\tan \delta$ of 0.7 or more at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz.

56. (currently amended): The interlayer film for laminated glasses according to Claim 53, ~~54 or 55~~, wherein a thickness of the intermediate layer is 10% or higher of a total thickness of the interlayer film for laminated glasses.

57. (original): The interlayer film for laminated glasses according to Claim 49, which has a three-layers structure, a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in one or any of two layers composing the outermost layer being at or below a half of a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in an intermediate layer.

58. (original): The interlayer film for laminated glasses according to Claim 57, wherein a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in one or any of two layers composing the outermost layer is 2×10^6 Pa or lower and a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in the intermediate layer is 1×10^7 Pa or higher.

59. (original): The interlayer film for laminated glasses according to Claim 58, wherein $\tan \delta$ at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in one or any of two layers composing the outermost layer is 0.7 or more.

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60. (currently amended): The interlayer film for laminated glasses according to Claim 57, ~~58 or 59~~,

wherein a total thickness of the outermost layer is 10% or higher of a total thickness of the interlayer film for laminated glasses.

61. (original): The interlayer film for laminated glasses according to Claim 49, which has a multilayer structure of four-layers or more, a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in at least one layer of an intermediate layer being at or below a half of a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in one or any of two layers composing the outermost layer.

62. (original): The interlayer film for laminated glasses according to Claim 61, wherein a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in at least one layer of the intermediate layer is 2×10^6 Pa or lower and a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in one or any of two layers composing the outermost layer is 1×10^7 Pa or higher.

63. (original): The interlayer film for laminated glasses according to Claim 62, wherein the intermediate layer having a storage elasticity modulus G' of 2×10^6 Pa or lower at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz has $\tan \delta$ of 0.7 or more at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz.

64. (currently amended): The interlayer film for laminated glasses according to Claim 62 ~~or 63~~,

wherein a total thickness of the intermediate layer having a storage elasticity modulus G' of 2×10^6 Pa or lower at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz is 10% or higher of a total thickness of the interlayer film for laminated glasses.

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65. (currently amended): The interlayer film for laminated glasses according to Claim 54, ~~55, 56, 62, 63 or 64,~~

wherein the intermediate layer having the storage elasticity modulus G' of 2×10^6 Pa or lower at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz is biased to the side of either surface layer with respect to the thickness direction of the interlayer film for laminated glasses.

66. (original): The interlayer film for laminated glasses according to Claim 49, which has a multilayer structure of four-layers or more, a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in one or any of two layers composing the outermost layer being at or below a half of a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in at least one layer of an intermediate layer.

67. (original): The interlayer film for laminated glasses according to Claim 66, wherein a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in one or any of two layers composing the outermost layer is 2×10^6 Pa or lower and a storage elasticity modulus G' at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in at least one layer of the intermediate layer is 1×10^7 Pa or higher.

68. (original): The interlayer film for laminated glasses according to Claim 67, wherein $\tan \delta$ at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz in one or any of two layers composing the outermost layer is 0.7 or more.

69. (currently amended): The interlayer film for laminated glasses according to Claim 66, ~~67 or 68,~~

wherein a total thickness of the outermost layer is 10% or higher of a total thickness of the interlayer film for laminated glasses.

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70. (currently amended): The interlayer film for laminated glasses according to Claim 58, ~~59, 60, 67, 68 or 69,~~

wherein the intermediate layer having the storage elasticity modulus G' of 1×10^7 Pa or higher at 20°C and a frequency of 5.0×10^1 to 1.0×10^2 Hz is biased to the side of either surface layer with respect to the thickness direction of the interlayer film for laminated glasses.

71. (currently amended): The interlayer film for laminated glasses according to Claim 49, ~~53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69 or 70,~~

which has a multilayer structure of three-layers or more, each layer having wedged form and the layer having wedged form being alternately overlaid with the layer of wedged having a small storage elasticity modulus G' taken as an intermediate layer so that an overall thickness becomes uniform.

72. (original): An interlayer film for laminated glasses,

wherein a break of 10 mm or longer in length is generated when an laminated glass is formed by sandwiching the interlayer film for laminated glasses between two glasses and a Head Injury Criteria (HIC) value of the laminated glass is measured.

73. (currently amended): The interlayer film for laminated glasses according to Claim 41, ~~42, 43, 44, 45, 46, 47 or 48,~~

wherein polyvinyl acetal resin contains metal oxide particles having a function of screening out heat rays.

74. (currently amended): The interlayer film for laminated glasses according to Claim 49, ~~50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71 or 72,~~

wherein polyvinyl acetal resin of at least one layer contains metal oxide particles having a function of screening out heat rays.

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75. (currently amended): The interlayer film for laminated glasses according to Claim 73 ~~or 74~~,

wherein the particle of metal oxide is tin-doped indium oxide and/or antimony-doped tin oxide, and the above-mentioned tin-doped indium oxide and/or the above-mentioned antimony-doped tin oxide has an average diameter of secondary particles formed by flocculation of 80 nm or smaller and is dispersed in polyvinyl acetal resin in such a way that a secondary particle formed by flocculation of 100 nm or larger in diameter has a density of 1 particle/ μm^2 or less in polyvinyl acetal resin.